

Climatological Data for July, 1909.

DISTRICT No. 5, UPPER MISSISSIPPI VALLEY.

GEORGE M. CHAPPEL, District Editor.

TEMPERATURE.

In comparing the mean temperature and the average total rainfall of the district with the normals for July, it would seem as if the climatic conditions during the past month had been about the same as the average for July; but, in studying the data as shown by the reports from the various States in the district, it is found that, in certain localities and at various times in the month, the conditions varied materially from the normal. From the 3d to the 7th the temperature was unseasonably low, and from the 3d to the 14th the rainfall was heavy and, in many places, excessive, especially over Minnesota, southern Iowa, Missouri and central, and southern Illinois. The rainfall was also excessively heavy in parts of Minnesota on the 20th and the 21st. The month opened with an area of high pressure, central over Minnesota and eastern Dakotas, which caused fair weather over the district and slightly lower temperature over the extreme northern portion of the Mississippi Valley. On the 2d, a disturbance, or low pressure area, appeared over Minnesota, which was followed on the 3d by another area of high pressure accompanied by much lower temperature which continued during the 4th and 5th, and extended over the whole of the district. The temperature was abnormally low in the Northern States on the 3d, and from central Iowa northeastward over Minnesota and Wisconsin on the 4th. A minimum temperature of 31° was recorded on the 3d at Sauk City, Wis., and the mean temperature on the 4th, at several stations in northeastern Iowa, was lower than ever before recorded since Weather Bureau stations were established. A minimum temperature of 33° was recorded on the 4th at Koenick, Wis., and on the 19th at Long Lake, Wis., with killing frosts over the northern counties of the same State.

The monthly temperature for the district, as shown by the records of 301 stations, was 70.6°, which is 1.1° below normal. The highest monthly mean was 79.0° at Cairo, Ill., and the lowest monthly mean, 62.7° at Vedesare, Wis. The highest temperature reported was 103° at Prairie du Chien, Wis., on the 29th; the lowest temperature reported was 31° at Sauk City, Wis., on the 3d. The average monthly maximum was 93°, and the average monthly minimum was 49°. The greatest daily range was 57° at Sauk City, Wis. The average of the greatest daily ranges was 34°.

PRECIPITATION.

The heavy rainfall between the 3d and 14th did considerable damage, especially in southern Iowa where the creeks and rivers were at flood stage. The bottom lands were flooded for the third time this season, and many thousand of acres of corn and other crops were washed or drowned out. Much of the small grain was ready for the harvester, but the ground was too wet for running machinery. There were 12 stations in Minnesota; 5 in Wisconsin; 12 in Illinois; 6 in Iowa; 4 in Missouri, and one in North Dakota, that reported 2.50 inches or more of rainfall in 24 consecutive hours at some time during the month. The following are some of the largest amounts given, viz: Milnor,

N. Dak., 4.00 inches on the 21st; Bagley, Minn., 10.00 inches on the 20th; Beaulieu, Minn., 10.75 inches on the 20th; Fosston, Minn., 8.97 inches on the 19th; Minneapolis, Minn., 3.75 inches on the 11th; Park Rapids, Minn., 4.17 inches on the 20th; Grantsburg, Wis., 3.00 inches on the 21st; Merrill, Wis., 2.51 inches on the 10th; Vedesare, Wis., 3.85 inches on the 20th; Benton, Ill., 3.50 inches on the 11th; Chester, Ill., 3.20 inches on the 27th; Cobden, Ill., 6.15 inches on the 27th; Knoxville, Ill., 4.60 inches on the 6-7th; Windsor, Ill., 4.61 inches on the 5-6th; Bloomfield, Iowa, 3.25 inches on the 6th; Fairfield, Iowa, 2.75 inches on the 6th; Gilman, Iowa, 3.13 inches on the 6th; Goin, Mo., 4.50 inches on the 6th; and Sublett, Mo., 3.50 inches on the 5th. At Minneapolis, Minn., on the 11th, 0.93 inch fell in one hour, 1.54 inches in two hours, and 2.63 inches in two hours and fifty-five minutes. At Springfield, Ill., on the 6th, 0.60 inch fell in twenty minutes and 0.81 inch in twenty-five minutes. On the 11th, 0.73 inch fell in fifteen minutes and 0.95 in twenty-five minutes. On the 12th, 0.52 inch fell in fifteen minutes.

The average precipitation for the district, as shown by the records of 315 stations, was 3.60 inches, which is 0.45 inch below the normal. The greatest amount, 15.12 inches, occurred at Bagley, Minn., and the least, 0.09 inch, at Lake Mills, Wis. The greatest amount in twenty-four hours, 10.75 inches, occurred at Beaulieu, Minn., on the 20th. Measurable precipitation occurred on an average of 8 days.

Sunshine and cloudiness.—The average number of clear days was 15; partly cloudy, 9; cloudy, 7.

Wind.—Southwest winds prevailed.

The conditions were more seasonable during the latter half of the month. The temperature was generally higher and the rainfall came in the form of light and scattered showers, although the precipitation was heavy from the 19th to the 21st in portions of Minnesota and Wisconsin, and on the 27th in parts of Illinois. The month closed with much higher temperature; the 29th being the warmest day of the month over the larger part of the district, when maximum temperatures were generally above 90° and, at several stations, above 100°, the highest being 103° at Prairie du Chien, Wis.

While thunderstorms were of frequent occurrence, the total number for the district was not as great as is usual during July, and the amount of loss was correspondingly small. The only severe windstorms reported were in Illinois. The following is quoted from the report of the Illinois section: "On Sunday afternoon of the 11th, a violent storm, with tornadic characteristics, passed through central Illinois in a southeasterly direction. Its most distinctive manifestations occurred in the vicinity of Pana, Christian County. It was accompanied by a deluge of rain and the wind unroofed houses, uprooted trees, and telephone and telegraph poles were snapped in two. Another destructive storm passed over Alton, on the Mississippi River, on the 12th."

Slight earthquake shocks were felt at a number of stations in Illinois and southeastern Iowa about 10:30 p. m. of the 18th.

MONTHLY WEATHER REVIEW.

JULY, 1909

TABLE 1.—Climatological data for July, 1909. District No. 5, Upper Mississippi Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.								
<i>North Dakota.</i>																						
Amenia.	Cass.	951	11	69.9	+ 2.5	96	19	50	51	39	2.99	- 0.79	1.15	0.0	6	18	6	7	s.	C. E. Wood.		
Bottineau.	Bottineau.	1,638	13	65.3	- 0.6	86	21	44	10	31	4.57	+ 2.35	0.75	0.0	12	7	14	10	se.	J. A. Kamp.		
Cando.	Towner.	1,458	7	65.1°	+ 0.9	S5°	20†	43°	31	35°	3.42	- 0.40	1.80	0.0	9	10	5	7	w.	E. T. Judd.		
Crosby.	Williams.	2	67.6	94	24	42	10	38	1.11	2.56	- 1.22	0.90	0.0	8	10	5	7	w.	B. Lancaster.			
DeVils Lake.	Ramsey.	1,482	3	66.9	- 1.3	89	31	47	3	31	1.07	- 0.97	0.37	0.0	4	11	13	13	s.	U. S. Weather Bureau.		
Donnybrook.	Ward.	1,760	9	39.2°	+ 4.7	97°	25	42b	10	43b	2.56	- 1.32	0.90	0.0	7	20	7	4	s.	F. S. Gieselman.		
Dunseith.	Rolette.	11	65.6	+ 0.4	89	31	47	6	30	3.32	+ 0.88	0.73	0.0	7	20	1	1	se.	L. H. Trowbridge.			
Edmore.	Ramsey.	1,524	3	67.4	90	25	45	3	37	2.54	- 1.00	0.80	0.0	9	13	17	1	se.	H. R. Aslakson.			
Forman.	Sargent.	1,249	14	70.4	+ 1.5	95	20	52	151	30	5.45	+ 1.00	2.39	0.0	12	13	5	nw.	A. Maltby.			
Grafton.	Walsh.	827	11	68.1	+ 1.0	87	31	46	3	30	5.45	+ 3.46	1.69	0.0	8	9	18	4	s.	H. Lamoure.		
Granville.	McHenry.	1,504	2	67.2°	92°	31	44°	23	38°	1.06	0.22	0.0	0.0	10	10	10	10	nw.	W. A. Christiansen.			
Hamilton.	Pembina.	824	11	65.4°	87°	31	43°	23	41°	2.92	- 1.01	0.0	0.0	7	8	12	12	s.	D. Wallace.			
Hannah.	Cavalier.	1,563	3	65.4	89	31	43	3	37	2.00	- 0.75	0.0	0.0	5	7	13	13	se.	J. Moffatt.			
Hansboro.	Towner.	1	65.4	89	31	43	3	37	2.00	- 0.75	0.0	0.0	5	7	13	13	se.	Geo. Dale.				
Hillsboro.	Trail.	901	3	69.4	91	19	48	3	32	1.60	- 0.79	0.0	0.0	6	14	13	4	nw.	M. H. Norman.			
Lakota.	Nelson.	1,519	13	64.6	87	31	42a	23	35a	2.37	- 0.80	0.0	0.0	9	10	20	1	se.	C. R. Pettes.			
Langdon.	Cavalier.	1,615	13	65.8	88	31	43	23	37	3.43	- 0.77	0.0	0.0	7	17	0	14	se.	J. Woolner.			
Larimore.	Grand Forks.	1,134	13	67.4°	+ 1.3	96°	31	44°	3	38	1.93	- 1.28	0.78	0.0	12	17	7	7	se.	M. Naylor.		
Lisbon.	Ransom.	1,091	4	68.3	92	19	49	10†	35	6.82	- 2.34	0.0	0.0	12	17	7	7	se.	H. K. Adams.			
McKinney.	Ward.	1,640	14	66.1	+ 2.5	93	25	38	8	44	0.86	- 1.31	0.30	0.0	3	11	16	4	nw.	M. P. Swenson.		
Manfred.	Wells.	1,605	7	67.8	92	20	45	3	38	2.78	- 0.87	0.0	0.0	6	13	16	2	s.	P. B. Anderson.			
Mayville.	Trail.	975	13	67.8	- 0.1	91	19†	46	5	36	2.35	- 1.17	1.10	0.0	8	20	0	11	s.	M. N. Pope.		
Minor.	Sargent.	1,449	10	67.0	- 1.6	90	1†	50	3†	40	5.00	- 0.28	0.50	0.0	9	15	3	13	e.	O. B. Jorgenson.		
Minot.	Ward.	1,557	10	67.0	91	31	41	10	37	1.47	- 0.28	0.50	0.0	9	15	3	13	e.	J. J. Bates.			
Minto.	Walsh.	820	15	68.2	+ 1.2	91	31	45	3	34	4.39	+ 1.52	2.05	0.0	8	11	11	9	e.	S. S. Marsh.		
Oriska.	Barnes.	1,270	3	69.8	91	31	45	2	34	4.39	- 0.59	1.79	0.0	0.0	5	16	9	6	se.	W. E. Williams.		
Park River.	Walsh.	998	5	65.4	90†	31	45b	3	37b	2.75	- 0.78	0.73	0.0	10	16	0	15	se.	A. Heyward.			
Pembina.	Pembina.	789	10	67.2	+ 1.1	88	17	48	3	23	1.90	- 0.99	0.59	0.0	8	16	1	14	e.	F. C. Warner.		
Portal.	Ward.	1,954	14	67.8	+ 2.2	96	25	40	1	42	2.15	+ 0.17	1.95	0.0	3	13	0	18	se.	M. S. Davis.		
Power.	Richland.	1,020	16	67.7	- 1.0	92	19	47	3	31	5.36	- 1.86	2.50	0.0	8	15	12	4	se.	J. A. Power.		
Pratt.	McHenry.	1,475	4	67.4	89	25	42	3	38	1.13	- 0.55	0.0	0.0	6	24	4	3	nw.	C. H. Butts.			
Towner.	...do.	1,475	2	67.0	89	31	46	3†	39	2.84	- 0.68	0.0	0.0	7	15	15	1	sw.	B. Bagley.			
University.	Grand Forks.	830	17	68.4	+ 1.4	90	19†	45	3	36	0.98	- 1.53	0.32	0.0	8	14	13	4	s.	G. W. Stewart.		
Wahpeton.	Richland.	962	17	67.9	- 2.1	91	19	47	23	32	3.56	- 0.59	1.79	0.0	5	16	9	6	se.	E. G. Burch.		
Walhalla.	Pembina.	906	4	65.4	90†	31	45b	3	37b	2.75	- 0.78	0.73	0.0	10	16	0	15	se.	J. D. Currie.			
Westhope.	Bottineau.	1,471	15	66.0	+ 0.5	89	31	42	16	43	3.05	+ 0.78	1.44	0.0	7	8	20	3	se.	M. A. Ostby.		
Willow City.	...do.	1,471	15	66.0	89	31	42	16	43	3.05	+ 0.78	1.44	0.0	7	8	20	3	se.				
<i>Minnesota.</i>																						
Albert Lea.	Freeborn.	1,229	19	71.5	+ 0.2	96	2	51	5	37	1.35	- 2.56	0.70	0.0	9	10	3	10	se.	Edward Carey.		
Alexandria.	Douglas.	1,391	15	69.8	+ 0.8	94	20	52	3†	34	1.13	- 2.21	0.58	0.0	4	16	7	5	nw.	F. O. Unumb.		
Angus.	Polk.	870	7	67.4	87	20†	46	3	33	4.88	- 3.11	0.0	0.0	13	16	14	1	s.	F. A. Wilson.			
Bagley.	Clearwater.	3	66.2	87	19	39	3	41	15.12	- 10.00	0.0	0.0	12	14	13	4	se.	Edward T. Teitsworth.				
Baudette.	Beltrami.	86.5	7	88	7	41	3	42	6.46	- 3.75	0.0	0.0	9	17	8	6	sw.	Franz W. Schmidt.				
Beardsley.	Bigstone.	1,090	16	69.6	+ 0.3	92a	20	47a	30	36a	3.24	- 0.41	1.53	0.0	9	15	7	7	se.	Roy A. Smith.		
Beaulieu.	Mahnomen.	1,200	7	68.4	89	1†	44	3	38	14.43	- 10.75	0.0	0.0	13	18	8	10	sc.	Dr. L. A. Parkinson.			
Bird Island.	Renville.	1,039	19	70.6	- 0.6	92	28	52	27	34	1.34	- 1.92	0.52	0.0	6	16	11	4	se.	Dr. F. L. Puffer.		
Caledonia.	Houston.	1,179	16	70.7	- 0.2	91	29	52	19	32	0.76	- 3.45	0.65	0.0	3	9	18	4	sw.	W. D. Bedlen.		
Campbell.	Wilkin.	984	...do.	68.0	93	20	50	4†	38	4.12	- 1.30	0.0	0.0	10	19	1	11	se.	J. T. Neiss.			
Cass Lake.	Cass.	1,300	3	65.4	88	1	48	3	31	13.38	- 1.15	0.0	0.0	9	9	9	9	se.	C. W. Burns.			
Collegeville.	Stearns.	1,282	16	70.2	- 0.8	93	20	49	5	29	2.33	- 1.22	1.22	0.0	6	19	3	9	nw.	Fridolin Tennbreull.		
Crookston.	Polk.	863	13	69.2	+ 1.0	89	19	50	3	28	3.90	+ 0.40	1.80	0.0	8	18	7	7	s.	A. G. Anderson.		
Detroit.	Becker.	1,364	13	68.3	+ 1.2	93	19	45	3	37	7.10	- 2.97	4.50	0.0	8	24	2	5	se.	G. W. Peoples.		
Fairmont, (near).	Martin.	753	22	70.4	- 0.3	93	2	53	4†	29	2.41	- 1.07	0.64	0.0	10	12	13	6	sw.	W. F. Wheeland.		
Faribault.	Rice.	1,003	13	69.4	- 0.9	92	2	50	3	34	1.46	- 2.88	0.60	0.0	5	21	7	3	nw.	A. R. T. Wylie.		
Farmington.	Dakota.	902	21	71.4	+ 0.9	95	3	52	3	30	1.58	- 1.87	0.98	0.0	3	17	6	8	sw.	E. D. Akin.		
Fergus Falls.	Ottertail.	1,210	17	69.6	- 0.2	92	20	53	15†	28	4.54	+ 0.71	2.50	0.0	9	13	7	1	se.	Chas. E. Klessenger.		
Fort Ripley.	Morrison.	1,135	3	68.0	92	20	43	3	41	2.58	- 1.38	0.0	0.0	4	19	0	12	s.	J. J. Tucker.			
Fosston.	Polk.	1,288	13	70.4	+ 0.9	91	20†	52	3	35	1.83	- 1.33	1.30	0.0	4	15	14	2	sw.	O. N. Hem.		
Glencoe.	McLeod.	1,006	13	70.4	+ 0.9	91	20†	52	3	35	1.83	- 1.33	1.30	0.0	4	16	11	4	sw.	C. G. Selvig.		
Grand Meadow.	Mower.	1,338	22	69.8	- 0.8	93	1	50	4	33	0.75	- 3.24	0.28	0.0	4	16	11	4	sw.	C. F. Greening.		
Hallock.	Kitsom.	870	10	67.6	+ 1.7	86	31	48	3†	33	2.68	- 0.49	1.20	0.0	7	20	6	7	sw.	D. A. Robertson.		
Halsted.	Norman.	870	3	68.0	91	10	46	3	33	3.59	- 1.29	0.0	0.0	10	17	7	7	w.	A. G. Holstrom.			
Hinckley.	Pine.	1,050	4	71.8	90†	20	52	3	34	5.26	- 2.10	0.0	0.0	6	10*	10*	1*	w.	W. R. Newman.			
International Falls.	Koochiching.	1	66.4	88	2	33	42	5	41	3.80	- 1.66	0.0	0.0	7	17	12	2	sw.	Rees Roe.			
Kellher.	Beltrami.	3	67.2	88	31																	

TABLE 1.—Climatological data for July, 1909. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing wind direction.	Observers.					
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.	Number of rainy days .01 inch or more.	Number of partly cloudy days.	Number of cloudy days.				
Minnesota—Cont'd.																					
St. Peter.	Nicollet.	840	16	71.9	+ 0.4	94	23	53	24	35	1.34	- 2.79	0.88	0.0	5	25	3	s. se.	Charles A. Cavanaugh.		
Sandy Lake Dam.	Aitkin.	1,234	16	67.8 ^d	+ 0.8	87	28	45 ^d	3	35 ^d	7.01	+ 3.27	2.47	0.0	6	23	2	6	J. W. Comstock.		
Shakopee.	Scott.	750	14			87	20	51	3	33	9.33		3.85	0.0	12	14	11	6	se.		
State Sanitorium.	Cass.	1	69.2										1.82	0.0	7	13	1	17	sw.		
Stillwater.	Washington.	694	4										1.82	0.0	6	18	7	6	s.		
Taylors Falls.	Chisago.	2	70.2			92	20	45	3	37	5.09								w.		
Wabasha ^m .	Wabasha.	662	17	71.2	- 1.1	96	3	40	4	36									nw.		
Warroad.	Roseau.		66.6 ^c			86 ^b	31	43 ^b	1	40 ^b	2.88		2.02	0.0	8	19	7	4	s.		
West Concord.	Dodge.	1,232	1	69.8	- 0.1	92	3	40	3	31	0.22		0.20	0.0	2	16	14	1	nw.		
Willow River.	Pine.	1,046	11	66.4	- 0.1	87	1	43	41	39	4.55	+ 0.80	2.00	0.0	7	14	13	4	s.		
Windom.	Cottonwood.	1,336	3	71.2	- 0.8	94	2	50	24	34	2.63		0.62	0.0	9	13	14	4	nw.		
Winnebago.	Faribault.	1,100	10	71.2	+ 2.3	88	1	46	3	53	5	33	1.89	- 3.03	0.91	0.0	6	14	7	10	nw.
Winnibigoshish.	Itasca.	1,300	21	69.2	- 1.0	96	2	52	4	37	5.00	+ 0.98	1.61	0.0	9	19	7	5	w.		
Winona.	Goodhue.	680	14	73.6	+ 1.1	96	2	50	5	26	5.19	+ 0.78	1.70	0.0	8	18	3	10	s.		
Worthington.	Nobles.	979	14	68.7	- 1.0	90	20	49	37	35	1.07		0.50	0.0	5	17	11	3	nw.		
Zumbrota.																					
South Dakota.																					
Millbank.	Grant.	1,148	19	69.3	- 0.8	96	20	49	23 ^c	37	2.18	- 0.49	0.60	0.0	10	18	3	10	sw.		
Wisconsin.																					
Antigo.	Langlade.	1,489	14	66.8	- 0.8	85	1 ^c	42	47	38	2.72		0.70	0.0	8	19	8	4	sw.		
Baron.	Barron.	1,115	16	68.7	+ 0.1	87	1 ^c	42	47	35	2.06	- 1	1.19	1.72	0.0	6	17	14	0	sw.	
Beloit.	Rock.	750	19	71.2	- 1.9	95	29	50	40	30	0.87		2.81	0.34	0	9	19	5	w.		
Brodhead.	Green.	812	11	72.2	- 0.9	99	29	45	19	37	0.85	- 4.81	0.50	0.0	4	24	4	3	sw.		
Burnett.	Dodge.	880	5	68.4	- 2.7	98	29	43	4	36	0.52		0.32	0.0	3	13	15	3	se.		
Delavan.	Walworth.	920	16	69.4									1.94	- 2.61	0.89	0.0	8	16	7	8	sw.
Douglasville.	Iowa.	1,116	10																		
Downing.	Dunn.	983	6	67.5	+ 1.6	92	2	40	47	40	4.96	+ 0.62	1.80	0.0	4	6	10	15	w.		
Eau Claire.	Eau Claire.	800	18	71.1	+ 0.5	93	2	50	4	34	2.20	- 1.22	1.17	0.0	4	18	7	6	w.		
Pierce.	1,068	1																			
Glidden.	Ashwood.	1,519																			
Grand Rapids.	Wood.	1,021	10	69.7	+ 0.4	96	29	45	15	42	1.16	- 1.58	0.67	0.0	3	18	9	6	s.		
Grantsburg.	Burnett.	1,095	18	68.6	- 0.1	92	2	41	5	39	5.75	+ 1.34	3.00	0.0	5	14	12	5	sw.		
Hancock.	Waushara.	1,091	17	70.3	- 0.1	97	29	46	3	34	1.23	- 2.87	0.78	0.0	4	14	13	3	w.		
Hatfield.	Jackson.	973	1																		
Hayward.	Sawyer.	1,197	18	65.3 ^j	- 1.8	86 ^j	1	40	37	40	3.55	- 0.14	0.0	0.0	10	6	5	w.			
Hiltsboro.	Vernon.	1,000	18	67.8	- 1.6	97	29	49	19	43	0.96	- 2.74	0.48	0.0	3	11	19	1	sw.		
Koepenick.	Langlade.	1,683	18	63.7	- 4.1	85	17	33	4	44	2.90	- 0.86	0.51	0.0	12	11	10	5	sw.		
La Crosse.	La Crosse.	714	37	71.0	- 1.6	98	2	52	24	34	0.66	- 3.41	0.56	0.0	5	10	12	5	se.		
Lake Mills.	Jefferson.	897	18	70.3	- 1.0	99	29	47	31	35	0.09	- 4.38	0.06	0.0	2	13	14	3	s.		
Lancaster.	Grant.	1,070	19	72.4 ^j	+ 1.2	97	29	47	19	33	1.55	- 2.72	0.58	0.0	4	12	7	9	n.		
Long Lake.	Oncida.	1,592	1	63.4		84	11	33	19	42	5.32		1.22	0.0	10	15	7	7	sw.		
Madison.	Dane.	974	31	70.4	- 2.0	95	29	53	4	32	0.29	- 3.70	0.13	0.0	4	10	14	7	w.		
Mather.	Juneau.	962		67.4		96	29	40	19	46	1.82		0.94	0.0	3	6	12	13	w.		
Mauiston.	Buffalo.	882	13	69.0	- 1.4	95	29	45	24	38	2.92	- 1.64	2.50	0.0	3	22	7	2	se.		
Meadow Valley.	Clark.	974	18	68.8	- 0.5	95	29	41	3	44	1.32	- 2.78	0.96	0.0	4	25	3	3	sw.		
Medford.	Taylor.	1,420	18	69.3	+ 1.0	91	21	44	37	41	3.37	- 0.75	1.15	0.0	5	17	9	5	w.		
Merrill.	Lincoln.	1,267	3			93	21						2.51	0.0	9	19	7	6	w.		
Minocqua.	Oneida.	1,604	5	66.5		85	6	45	37	34					16	11	4	4	w.		
Monodovi.	Buffalo.	738	1	69.4		92	2	46	37	31	1.39		1.04	0.0	4	22	5	4	nw.		
Mount Horeb.	Dane.	1,226	5	70.4		98	29	46	4	31	0.61		0.30	0.0	4	19	7	5	w.		
Muscoy.	Grant.	666		71.8		100	29	44	24	41	1.09		0.66	0.0	4	9	19	3	sw.		
Neillsville.	Clark.	996	20	70.2	+ 0.5	95	31	44	24	42	1.85	- 2.58	1.71	0.0	3	17	0	14	nw.		
New Richmond.	St. Croix.	990	4	70.3		93	21	43	31	39	3.05		1.92	0.0	5	16	13	2	sw.		
Oceola.	Polk.	806	18	69.5	+ 0.8	95	2	45	47	36	3.53	- 0.68	1.50	0.0	5	15	14	2	e.		
Portage.	Columbia.	809	13	70.8	- 0.8	96	29	47	19	34	1.43	- 2.19	0.75	0.0	4	22	8	1	sw.		
Prairie du Chien.	Crawford.	690	22	72.5	- 1.4	103	29	50	24	35	1.11	- 2.64	0.61	0.0	3	16	8	7	s.		
Prentice.	Price.	1,551	11	64.3	- 1.6	88	1	34	4	44	3.60	- 0.59	1.15	0.0	10	1	17	13	s.		
Rhinelander.	Oneida.	1,550	4	66.8		88	1	40	5	40	4.11		1.56	0.0	15	7	15	3	se.		
Sauk City.	Sauk.	758	1	71.8		98	29	31	3	57	3	0.29	0.20	0.0	3	10	18	3	w.		
Shullsburg.	Lafayette.	1,019	3	69.3		93	29	45	19	39	0.53		0.17	0.0	8	15	8	8	sw.		
Solon Springs.	Douglas.	1,083	2	65.4		87	1	38	31	43	7.60		2.60	0.0	9	18	4	9	sw.		
Spooner.	Washburn.	1,104	14	67.6	- 1.7	87	21	43	3	36	4.80	+ 0.97	1.58	0.0	9	24	3	4	sw.		
Stanley.	Chippewa.	1,082	5	67.2		89	2	44	3	36	2.78		1.16	0.0	5	18	7	6	w.		
Stevens Point.	Portage.	1,113	16																		
Valley Junction.	Monroe.	930	17	69.4	+ 0.4	94	29	42	19	39	0.99	- 3.02	0.59	0.0	5	16	12	3	nw.		
Viroqua.	Vernon.	1,412	18	70.7	- 0.3	90	29	49	4	33	1.24	- 2.81	1.19	0.0	3	15	9	7	sw.		
Vudesare.	Villas.	1,600	1	62.7		85	9	36	4	38	10.24		3.55	0.0	9	17	9	5	w.		
Watertown.	Jefferson.	824	17	69.0	- 1.5	95	29	45	19	34	0.54		3.45	0.26	0	5	15	14	2	sw.	
Waukesha (1).	Waukesha.	970	13										0.46	- 3.37	0.26	0					
Waukesha (2).	do.	864	1	70.6	- 0.9	98	29	43	19	36	0.65	- 3.18	0.41	0.0	3	10	21	0	sw.		
Wausau.	Marathon.	1,212	17	68.6	+ 0.1	90	21	45	31	33	2.41	- 1.81	0.99	0.0	7	11	19	1	se.		
Weyerhaeuser.	Rusk.	1,297	2	65.8		87	21	38	4	38	4.23		1.50	0.0	9	15	13	3	nw.		
Whitehall.	Trempealeau.	675	17								0										

MONTHLY WEATHER REVIEW.

JULY, 1909

TABLE 1—Climatological data for July, 1909. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Number of rainy days, .01 inch or more.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.					
Iowa—Cont'd.																			
Des Moines.....	Polk.....	861	31	72.9	- 2.6	96	29	54	4	25	4.41	+ 0.55	1.68	0.0	14	8	12	11	nw.
De Soto.....	Dallas.....	866	8	72.9	+ 0.3	95	2	53	4	30	2.88	- 12.95	1.38	0.0	12	21	2	8	sw.
Dows.....	Wright.....	1,142	8	69.8	- 1.7	91	2	50	4	31	2.57	- 3.06	0.93	0.0	7	17	5	9	sw.
Dubuque.....	Dubuque.....	639	35	71.8	+ 2.9	96	29	53	5	28	1.30	- 3.00	0.40	0.0	8	14	9	8	nw.
Earlham.....	Madison.....	9	72.2	+ 2.2	95	29	50	24	32	3.78	- 1.06	0.96	0.0	10	18	2	11	se.	
Elkader.....	Clayton.....	727	27	73.6	0.0	102	29	48	5	40	1.60	- 3.03	0.65	0.0	20	6	5	5	se.
Elms.....	Howard.....	69.8	.....	92	2	49	24	35	2.52	.....	0.93	0.0	8	4	24	3	se.	H. A. Moore.	
Estherville.....	Emmet.....	1,298	12	69.6	- 1.5	94	2	51	5	32	4.75	- 0.17	1.00	0.0	10	20	0	11	s.
Fairfield.....	Jefferson.....	14	73.3	- 1.4	93	29	54	5	28	7.61	+ 3.62	2.57	0.0	11	16	8	7	sw.	
Fayette.....	Fayette.....	1,003	18	70.6	- 2.5	97	2	48	2	39	1.65	- 2.44	0.70	0.0	5	.....	.....	.....	sw.
Forest City.....	Winnebago.....	1,226	14	70.4	- 1.6	94	2	52	5	30	3.13	- 0.55	1.40	0.0	5	19	5	7	sw.
Fort Dodge.....	Webster.....	1,126	8	71.1	- 1.4	94	2	52	18	35	5.29	+ 1.26	1.30	0.0	10	17	1	13	se.
Fort Madison.....	Lee.....	516	59	.....	.....	.....	.....	5	.....	5.99	+ 2.03	2.55	0.0	6	11	8	13	sw.	
Gilman.....	Marshall.....	1,052	9	69.6	.....	.....	.....	5	.....	5.33	+ 0.74	3.13	0.0	10	.....	.....	.....	J. L. Wylie.	
Grand Meadow.....	Clayton.....	1,180	17	69.6	- 0.9	91	29	52	4	30	1.33	- 3.44	0.40	0.0	6	12	13	6	sw.
Greene.....	Butler.....	92	72.7	- 0.6	97	29	52	4	35	2.91	- 1.79	1.74	0.0	7	9	10	9	w.	
Grinnell.....	Powersbirk.....	1,023	16	72.2	- 1.0	98	29	52	5	32	4.85	- 0.10	1.00	0.0	11	12	10	9	w.
Grundy Center.....	Grundy.....	976	17	71.8	- 0.4	96	29	52	4	34	2.04	+ 2.51	0.50	0.0	10	20	4	7	s.
Guthrie Center.....	Guthrie.....	1,077	13	72.9	- 0.5	94	2	52	24	32	4.58	- 0.24	1.75	0.0	14	17	6	8	sw.
Hampton.....	Franklin.....	1,155	18	72.2	- 0.2	94	29	52	5	31	2.73	- 2.10	1.06	0.0	7	13	9	10	nw.
Humboldt.....	Humboldt.....	1,095	17	72.2	- 0.7	94	2	52	24	30	4.89	+ 0.95	1.08	0.0	9	24	3	4	se.
Independence.....	Buchanan.....	921	43	71.0	- 1.9	96	29	49	4	33	1.53	- 3.06	0.96	0.0	5	18	7	6	sc.
Indiana.....	Warren.....	969	17	72.7*	- 2.0	95	29	56	5	26*	1.67	- 2.59	1.11	0.0	11	15	5	11	se.
Iowa City.....	Johnson.....	683	49	72.6	- 1.6	93	29	52	4	31	3.75	+ 1.27	2.19	0.0	12	17	8	6	se.
Iowa Falls.....	Hardin.....	1,170	15	70.4	- 1.6	93	2	52	5	34	2.07	- 2.03	0.85	0.0	8	19	4	6	sw.
Jefferson.....	Greene.....	72.8	.....	94	4	54	24	39	5.49	+ 1.63	2.25	0.0	7	18	6	7	s.		
Keokuk.....	Lee.....	647	37	73.6	- 3.4	83	29	54	4	27	5.46	+ 1.43	2.86	0.0	10	13	11	11	U. S. Weather Bureau.
Keosauqua.....	Van Buren.....	646	16	73.0	- 2.9	97	1	56	4	32	6.94	+ 2.81	2.40	0.0	8	9	13	9	.....
Knoxville.....	Marion.....	920	12	73.8	- 1.7	96	29	54	4	29	6.48	+ 2.02	2.22	0.0	10	12	11	8	sw.
Lacona.....	Warren.....	9	.....	.....	.....	.....	.....	5	.....	4.83	+ 0.35	1.80	0.0	9	.....	.....	.....	J. B. Alter.	
Le Claire.....	Scott.....	576	.....	.....	.....	.....	.....	5	.....	3.41	- 1.21	0.95	0.0	10	.....	.....	.....	Miss Margaret T. Disney.	
Marshalltown.....	Marshall.....	947	16	70.6	- 2.6	95	29	52	5	30	3.90	- 0.81	1.58	0.0	9	2	22	7	se.
Mason City.....	Cerro Gordo.....	1,132	11	69.9	- 1.6	93	2	50	15	33	2.24	- 1.83	0.97	0.0	7	13	13	5	se.
Mount Pleasant.....	Henry.....	729	26	72.3	- 3.3	93	29	53	4	26	6.30	+ 2.56	1.05	0.0	10	15	7	9	sw.
Muscatine.....	Muscatine.....	49	.....	.....	.....	.....	.....	5	.....	3.63	- 0.28	1.00	0.0	12	.....	.....	.....	William Molis.	
New Hampton.....	Chickasaw.....	1,169	11	70.0	- 1.4	92	22	48	4	33	1.94	- 2.25	0.55	0.0	9	11	13	7	w.
Newton.....	Jasper.....	944	19	72.5	- 1.9	95	29	53	5	28	3.23	- 1.15	0.95	0.0	7	18	6	7	se.
Northwood.....	Olin.....	1,222	12	70.2	- 1.0	93	29	52	5	30	0.0	.....	0.0	0.0	17	0	5	5	sw.
Osage.....	Jones.....	760	11	70.2	- 3.0	90	29	51	4	37	3.55	- 0.42	1.50	0.0	7	23	4	4	s.
Mitchell.....	Sac.....	1,184	17	71.9	+ 1.4	95	2	52	4	35	1.61	- 2.11	0.75	0.0	3	14	11	6	sw.
Oskaloosa.....	Madison.....	543	24	72.6	- 1.8	93	29	55	5	28	3.94	- 0.03	1.70	0.0	12	19	0	12	sw.
Ottumwa.....	Wapello.....	649	14	.....	.....	.....	.....	5	.....	4.83	+ 0.35	1.80	0.0	9	.....	.....	.....	Joseph Boyd.	
Pella.....	Marion.....	877	8	71.4	- 4.6	92	29	54	5	28	2.92	- 1.44	0.86	0.0	11	24	0	7	sc.
Perry.....	Dallas.....	975	7	72.6	- 2.0	95	2	55	5	29	5.38	+ 0.77	1.35	0.0	10	13	12	6	.....
Plover.....	Pocahontas.....	1,426	12	72.1	- 0.5	96	2	50	24	36	4.50	+ 0.13	1.95	0.0	13	19	5	7	se.
Ridgeway.....	Pocahontas.....	1,215	4	70.8	.....	93	2	52	4	28	5.83	.....	1.52	0.0	14	10	13	8	se.
Rockwell City.....	Winneshiek.....	1,215	10	71.9	- 1.5	102	29	52	5	32	1.24	- 3.42	0.40	0.0	8	17	10	4	s.
Sac City.....	Calhoun.....	1,278	26	73.5	+ 0.1	95	2	50	5	28	6.42	+ 2.90	1.85	0.0	8	20	4	7	.....
St. Charles.....	Sac.....	1,070	7	72.8	- 1.3	95	29	57	5	26	2.21	- 3.58	0.80	0.0	11	15	10	6	se.
Sigourney.....	Keokuk.....	877	12	73.2	- 2.6	96	29	53	5	32	2.70	- 1.60	0.70	0.0	6	1	26	4	se.
Stockport.....	Van Buren.....	6	72.0	.....	91	29	55	4	25	8.57	+ 3.08	4.62	0.0	10	17	8	7	ne.	
Storm Lake.....	Buena Vista.....	1,440	12	71.0	- 0.9	92	2	51	4	27	5.87	+ 1.57	1.75	0.0	12	16	8	7	s.
Stuart.....	Guthrie.....	1,216	10	74.2	- 0.6	98	29	52	5	30	4.17	- 0.05	1.37	0.0	9	18	7	6	sw.
Tipton.....	Cedar.....	807	10	74.2	- 0.6	98	29	52	5	30	5.16	- 1.10	2.01	0.0	10	17	7	9	nw.
Toledo.....	Tama.....	836	14	71.4	- 2.2	95	29	52	5	30	5.16	- 1.10	2.01	0.0	10	19	8	4	e.
Wapello.....	Louisa.....	588	10	71.3	- 2.9	90	29	53	5	22	3.99	+ 0.77	1.34	0.0	10	19	5	5	se.
Washington.....	Washington.....	769	27	71.8	- 3.7	94	29	53	4	26	2.68	- 0.94	1.11	0.0	9	8	13	10	se.
Waterloo.....	Black Hawk.....	862	25	72.4	- 1.1	95	29	54	5	31	1.20	- 8.20	0.47	0.0	7	16	9	6	se.
Aledo.....	Dallas.....	1,039	5	71.8	.....	95	2	54	24	28	4.45	- 1.92	1.52	0.0	13	15	8	8	sw.
Alexander.....	Bremer.....	948	12	71.2	- 1.2	91	2	52	5	30	1.57	- 2.97	0.42	0.0	8	10	14	7	.....
Antioch.....	Hamilton.....	3	73.2	.....	95	2	51	24	49	5.30	- 1.20	1.30	0.0	12	6	15	12	4	ne.
Ashton.....	Palo Alto.....	1,197	14	72.0	- 0.1	96	2	52	4	34	5.29	+ 1.51	1.20	0.0	12	6	19	6	se.
Whitten.....	Hardin.....	1,036	10	72.3	- 1.0	96	29	50	4	32	2.98	- 1.36	0.66	0.0	6	19	6	6	se.
Wilton Junction.....	Madison.....	683	13	73.1	- 1.6	94	1	50	17	35	3.30	- 1.92	1.96	0.0	5	21	2	8	w.
Winterset.....	Madison.....	1,129	17	75.0	+ 1.0	96	2	56	23	32	2.39	.....	0.93	0.0	11	14	9	8	s.
Zearing.....	Story.....	4	71.8	.....	98	2	53	4	30	3.09	.....	0.65	0.0	10	.....	.....	.....	Robert S. Cooper.	
Darksville.....	Randolph.....	826	18	75.2	- 0.8	91	6	58	4	27	5.25	+ 1.05	2.25	0.0	7	18	6	7	s.
Gorin.....	Scotland.....	23	.....	.....	.....											

TABLE 1.—*Climatological data for July, 1909. District No. 5—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.	Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	
<i>Illinois—Cont'd.</i>																			
Colchester.....	McDonough.....	694	7																
Dakota.....	Stephenson.....	920	70.6			95	29	48	4	38	1.37		0.41	0.0	8	12	14	5	w.
Decatur.....	Macon.....	685	17	72.8	- 2.9	94	1†	48	19	35	6.18	+ 2.76	2.52	0.0	10	16	9	6	se.
Dixon.....	Lee.....	725	19	71.6	- 2.3	95	29	48	19	34	1.51	- 2.59	0.87	0.0	5	19	2	10	s.
Du Quoin.....	Perry.....	459	18	78.5	+ 0.2	99	2	58	4†	32	8.72	+ 4.41	3.00	0.0	9	17	12	2	sw.
Dwight.....	Livingston.....	600	15	71.8	- 3.5	97	29	46	4†	37	1.50	- 2.03	0.82	0.0	7	14	6	11	se.
Galva.....	Henry.....	842	17	71.9	- 2.3	98	29	49	3†	34	4.74	+ 0.95	1.52	0.0	13	18	3	10	ne.
Greenville.....	Bond.....	635	26	74.6	- 2.0	96	2	52	4	33	4.11	+ 0.89	1.68	0.0	7	16	9	6	se.
Griggsville.....	Pike.....	650	32	74.6	- 2.0	96	2	52	4	33	4.11	+ 0.89	1.68	0.0	7	20	6	5	George F. Kneeland.
Halfway.....	Williamson.....	569	13	77.0	- 1.7	98	6	57	4	33	6.44	+ 3.38	1.78	0.0	9	18	7	6	s.
Havana.....	Mason.....	475	16	74.9	- 2.2	97	2	50	4	35	4.84	+ 0.58	1.31	0.0	9	13	15	3	ne.
Henry.....	Marshall.....	500	20	72.2	- 2.1	95	29	48	19	34	3.81	+ 0.09	1.04	0.0	20	17	8	6	ne.
Hillsboro.....	Montgomery.....	675	14	74.4	- 2.1	97	3	52	4	34	6.25	+ 2.29	2.12	0.0	10	19	2	10	s.
Joliet.....	Will.....	541	17	70.9	- 2.8	92	28	43	4	32	1.69	- 1.99	0.57	0.0	7	15	3	13	sw.
Kishwaukee.....	Winnebago.....	730	19	70.9	- 2.1	97	29	44	19	36	1.35	- 2.34	0.36	0.0	7	20	6	5	sw.
Knoxville.....	Knox.....	775	19	71.0	- 3.5	93	29	45	19	35	7.41	+ 3.24	4.60	0.0	6	17	8	6	sw.
La Grange.....	Cook.....	657	16	71.8	- 1.2	95	29	48	4	36	1.28	- 2.73	0.98	0.0	4	14	12	5	sw.
La Harpe.....	Hancock.....	698	30	72.8	- 3.6	93	29	50	4	30	6.18	+ 1.86	2.90	0.0	5	20	4	7	sw.
Lanark.....	Carroll.....	853	18	69.6	- 2.9	98	29	40	19	42	1.53	- 2.76	0.52	0.0	9	20	6	5	se.
La Salle.....	La Salle.....	536	33	71.3	- 3.5	95	29	49	4	31	2.52	- 0.75	0.93	0.0	10	12	12	7	sw.
Lincoln.....	Logan.....	482	20	71.8	- 2.3	96	29	45	19	38	2.45	- 0.98	0.80	0.0	7	15	10	6	s.
Martinton.....	Iroquois.....	633	21	71.8	- 2.3	96	29	45	19	38	2.45	- 0.98	0.80	0.0	7	15	10	6	Joseph H. Peltier.
Mascoutah.....	St. Clair.....	425	18	77.7	- 0.2	99	2	52	4	41	7.63	+ 4.29	3.51	0.0	10	19	8	4	nw.
Minonk.....	Woodford.....	745	15	72.2	- 2.5	96	29	46	4	36	1.98	- 1.19	1.00	0.0	5	16	8	7	w.
Monmouth.....	Warren.....	784	18																Hugh R. Moffet.
Morrison.....	Whiteside.....	685	13	70.6	- 2.5	93	29	47	19	32	3.59	- 1.56	1.66	0.0	9	15	11	5	s.
Morrisonville.....	Christian.....	638	9	72.6	- 2.6	92	2	48	4	30	6.77	+ 2.61	2.98	0.0	9	15	4	12	e.
Mount Vernon.....	Jefferson.....	511	14	76.0	- 1.8	97	2†	55	25	41	4.03	- 0.06	1.41	0.0	8	16	5	10	n.
Oregon.....	Ogle.....	703	23	71.3		98	29	45	19	35	0.45		0.15	0.0	3	18	0	13	sw.
Ottawa.....	La Salle.....	500	23	72.4	- 2.7	97	29	48	4†	35	2.95	- 0.95	0.86	0.0	8	16	4	11	sw.
Pana.....	Christian.....	692	22	72.4	- 3.9	91	29	51	4†	26	8.82	+ 4.84	2.98	0.0	10	25	3	3	nw.
Pearl.....	Pearl.....	609	33	71.4	- 4.0	94	29	47	19	34	4.57	+ 1.80	2.37	0.0	9	13	6	6	e.
Pontiac.....	Livingston.....	546	7	73.2		96	29	47	19	33	2.29		0.95	0.0	10	14	8	9	sw.
Kiley.....	McHenry.....	656	50	70.5	- 1.1	98	29	48	4	33	0.63	- 2.90	0.15	0.0	7	15	9	9	sw.
Rockford.....	Winnebago.....	783	13	72.0	- 1.7	97	29	49	4†	30	0.63	- 2.99	0.20	0.0	8	25	3	4	sw.
Rushville.....	Schuylerville.....	670	8	72.8		91	2†	51	4	27	3.09		2.31	0.0	5	13	9	9	s.
St. Charles.....	Kane.....	700	12	70.6	- 2.9	98	29	46	4	36	0.38	- 3.72	0.13	0.0	6	14	3	4	sw.
Springfield.....	Sangamon.....	644	28	73.6	- 2.9	94	2	51	4	30	6.47	+ 3.57	2.45	0.0	11	14	7	10	s.
Staunton.....	Macoupin.....	625	25	75.5		97	2	52	4	36	2.70		1.04	0.0	5	21	9	1	sw.
Streator.....	La Salle.....	626	15	72.6	- 2.2	97	29	41	19	44	2.60	- 1.61	0.65	0.0	11	22	5	4	sw.
Sullivan.....	Moultrie.....	530	9	73.1		96	2	47	4	35	5.53		1.68	0.0	11	16	9	6	sw.
Sycamore.....	De Kalb.....	855	28	71.2	- 0.7	101	29	45	4	41	0.62	- 3.13	0.55	0.0	3	17	3	11	e.
Tilden.....	Randolph.....	500	23	77.6	+ 0.4	97	2	54	4	36	6.14	+ 2.69	2.25	0.0	9	22	6	3	s.
Tiskilwa.....	Bureau.....	798	14	70.6	- 3.3	92	29	48	4	34	3.03	- 1.24	1.15	0.0	11	20	3	8	nw.
Walnut.....	do.....	717	17	75.2	- 0.3	98	29	48	4	33	1.83	- 2.35	0.95	0.0	7	13	3	5	e.
White Hall.....	Green.....	573	73.4			94	2	51	4†	33	6.02		2.08	0.0	9	18	7	6	ne.
Windsor.....	Shelby.....	681	10	73.4	- 1.8	95	1†	49	4†	34	6.80	+ 2.72	4.61	0.0	10	9	13	9	s.
Yorkville.....	Winnebago.....	900	21	70.7	- 2.0	97	29	44	19	37	1.03	- 2.80	0.30	0.0	7	16	10	5	sw.
Kendall.....	Kendall.....	584	21	71.6	- 1.2	98	29	44	4†	41	2.24	- 1.83	0.75	0.0	8	20	4	7	w.
Zion.....	Carroll.....	938	13	70.3	- 1.5	95	29	44	19	34	0.43	- 3.34	0.35	0.0	4	25	2	4	sw.

* Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

** Precipitation included in that of the next measurement.

† Also on other dates.

‡ Data are from standard instruments not supplied by the U. S. Weather Bureau.

§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

|| Estimated by observer.

||| Precipitation for the 24 hours ending on the morning when it is measured.

T Precipitation is less than 0.01 inch rain or melted snow.

* † ‡ etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

TABLE 2.—*Daily precipitation for July, 1909. District No. 5, Upper Mississippi Valley.*

a indicates 10.00. *b* indicates 10.75.

TABLE 2.—*Daily precipitation for July, 1909. District No. 5—Continued.*

JULY, 1909

TABLE 2.—*Daily precipitation for July, 1909. District No. 5—Continued.*

TABLE 2.—*Daily precipitation for July, 1909.* District No. 5—Continued.

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TABLE 3.—Maximum and minimum temperatures at selected stations, July, 1909. District No. 5, Upper Mississippi Valley.

Date.	North Dakota.												Minnesota.																						
	Bottineau.		Devils Lake.		Linton.		Minot.		Pembina.		Collegesville.			Crookston.			Grand Meadow.			Montevideo.			Moorhead.			New Ulm.			Pine River Dam.			St. Paul.		Winnibigoshish.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.			
1...	84	51	84	54	87	60	85	51	82	50	88	60	84	57	93	65	89	65	85	60	91	69	87	60	87	67	88	55	85	55					
2...	89	57	74	52	80	68	70	60	72	58	91	70	71	64	92	90	72	78	59	85	69	84	64	92	60	81	67	88	55	85	55				
3...	71	50	71	47	74	65	76	49	81	48	75	50	73	50	84	52	74	54	76	50	80	58	74	58	73	55	78	46	75	51	76	51			
4...	75	55	72	55	68	64	73	57	78	55	73	54	78	56	62	50	59	70	56	64	74	44	65	65	66	65	76	51	76	51	76	51			
5...	71	53	67	52	68	62	66	56	83	52	67	49	70	53	63	51	63	50	67	56	73	43	69	60	65	55	81	49	81	49	81	49			
6...	66	54	73	57	76	61	67	58	84	53	76	54	83	60	63	56	73	57	82	60	71	56	84	53	74	59	84	52	84	52	84	52			
7...	68	59	76	56	74	55	68	60	80	60	80	51	85	57	82	54	79	58	80	56	83	57	84	49	82	61	84	55	85	55	85	55			
8...	73	58	76	62	83	59	76	58	81	61	83	63	84	65	83	60	75	65	84	65	85	70	82	62	82	59	81	66	81	66	81	66			
9...	75	56	73	58	80	55	69	55	81	61	81	65	75	59	85	67	84	66	80	57	85	67	82	65	84	70	81	66	81	66	81	66			
10...	75	44	75	50	80	49	80	41	81	52	82	60	76	55	82	62	84	53	79	54	86	65	83	63	82	64	82	62	82	62	82	62			
11...	70	58	69	58	76	55	77	55	78	56	81	59	83	62	82	64	80	58	85	66	78	50	73	62	79	53	73	62	79	53	73	62			
12...	70	50	73	55	71	54	73	55	81	57	75	56	72	60	80	60	76	57	74	56	80	60	74	48	78	62	80	59	81	59	81	59			
13...	72	54	76	56	80	51	78	52	76	56	83	55	77	57	82	56	83	55	78	55	82	53	84	50	79	59	81	59	81	59	81	59			
14...	67	48	70	54	14	55	65	52	67	53	80	61	73	60	80	55	78	55	76	59	81	65	73	53	79	61	81	59	81	59	81	59			
15...	72	49	71	52	74	54	70	51	68	52	75	55	72	57	77	54	78	55	74	55	82	56	74	57	75	55	81	59	81	59	81	59			
16...	78	49	76	52	80	40	81	49	81	38	83	54	77	53	84	51	85	53	80	54	86	56	80	58	80	58	83	59	83	59	83	59			
17...	79	57	80	57	83	52	88	52	88	59	86	56	82	58	88	57	84	54	89	57	84	56	84	61	85	59	85	59	85	59	85	59			
18...	79	61	78	61	80	61	89	64	72	55	80	54	78	60	80	60	84	61	82	61	85	61	82	54	76	60	80	50	80	50	80	50	80	50	
19...	78	62	84	66	92	61	82	70	76	59	81	60	89	68	89	63	77	57	82	69	85	68	86	57	79	62	81	53	81	53	81	53	81	53	
20...	80	60	85	66	90	60	87	64	84	64	83	69	86	65	88	63	93	66	86	69	89	73	88	67	90	68	88	65	88	65	88	65	88	65	
Mns	75.5	55.1	77.0	56.8	79.4	57.2	78.4	55.6	78.3	56.1	81.5	58.9	79.2	59.1	80.9	58.8	81.2	59.1	79.9	58.1	83.5	61.9	80.0	56.2	80.1	61.6	80.3	58.0	80.3	58.0	80.3	58.0	80.3	58.0	

Date.	Wisconsin.												Iowa.																			
	De la Caille.		Eau Claire.		La Crosse.		Madison.		Muscaton.		Spooner.		Wausau.		Algona.		Cedar Rapids.		Charles City.		Davenport.		Des Moines.		Dubuque.		Keokuk.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1...	86	64	88	68	70	86	68	85	65	85	63	83	65	89	68	93	65	90	69	91	69	88	65	92	67	88	70	90	60	90	70	
2...	89	57	93	65	63	89	57	88	57	87	51	90	61	93	70	93	72	93	69	94	70	87	67	92	70	92	70	88	64	92	70	
3...	77	48	76	51	53	70	54	75	49	71	43	73	45	85	59	73	60	88	57	74	59	81	63	74	55	88	64	78	54	84	64	
4...	72	43	75	50	67	63	68	53	70	49	74	47	66	61	69	53	69	54	65	54	71	56	65	54	68	53	73	53	73	53	73	53
5...	67	53	78	51	67	54	65	54	68	52	78	45	75	45	60	52	62	53	62	53	63	56	63	53	74	53	74	53	74	53	74	53
6...	72	52	79	53	71	57	68	54	70	48	83	53	80	50	64	57	64	54	62	57	63	58	66	64	77	57	61	66	77	61	66	77
7...	79	50	87	54	64	55	78	57	80	48	86	56	82	54	85	57	86	53	81	60	77	60	69	59	77	60	69	65	77	60	69	65
8...	81	50	85	55	65	57	82	58	84	48	85	57	84	53	81	63	83	64	83	64	82	60	83	65	83	60	83	68	83	66	83	66
9...	87	54	86	69	86	69	83	60	84	54	83	66	83	63	82	68	87	63	84	66	87	66	85	71	85	66	89	66	86	66	86	66
10...	86	58	85	66	84	65	82	66	81	64	82	55	85	66	84	63	83	67	83	64	89	67	86	67	86	71	86	67	86	67	86	67
11...	82	65	83	79	57	84	80	67	84	76	53	84	66	84	66	79	68	81	66	84	66	88	60	70	67	84	66	86	66	86	66	86
12...	88	59	73	63	85	66	81	66	80	68	74	57	78	63	81	62	82	62	83	67	82	66	73	67	83	67	83	67	83	67	83	67
13...	83	59	84	57	84	60	80	60	80	60	81	51	82	57	84	63	82	62	80	59	80	65	71	81	63	83	66	86	64	86	64	86
14...	86	54	82	58	85	60	82	56	80	56	79	58	83	58	80	57	86	64	82	61	81	58	85	64	82	62	83	66				

TABLE 3.—*Maximum and minimum temperatures at selected stations, July, 1909. District No. 5—Continued.*

Date.	Illinois.												Springfield.				Winona Co.	
	Hambl, Mo.		Laporte, Ind.		Cairo.		Greenville.		La Salle.		Mt. Vernon, Ill.		Peoria.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.	91	64	90	61	89	73	.....	.....	92	67	92	70	92	64	92	67	87	67
2.	93	71	91	57	94	74	.....	.....	93	62	97	70	91	61	94	66	91	62
3.	78	63	91	54	92	73	.....	.....	71	56	83	73	76	56	79	57	74	52
4.	80	57	73	46	80	64	.....	.....	71	49	76	62	75	54	78	51	72	46
5.	72	62	70	54	91	66	.....	.....	61	55	75	56	62	56	66	59	63	53
6.	85	66	73	52	94	78	.....	.....	82	57	97	56	68	59	76	62	65	53
7.	72	68	85	59	88	74	.....	.....	80	61	79	68	73	63	72	65	80	52
8.	84	69	85	56	82	73	.....	.....	82	60	88	68	84	62	84	64	85	55
9.	89	67	91	55	85	73	.....	.....	86	59	85	65	87	58	87	61	90	55
10.	81	67	89	65	77	72	.....	.....	86	69	81	65	86	68	81	67	80	67
11.	87	66	91	65	87	73	.....	.....	82	68	89	70	84	68	86	69	83	66
12.	83	64	93	65	93	77	.....	.....	80	68	92	73	81	62	87	65	83	70
13.	84	63	91	59	88	73	.....	.....	82	65	90	67	83	62	84	64	84	60
14.	85	66	91	59	89	72	.....	.....	84	64	89	65	84	62	84	68	86	60
15.	84	64	88	61	88	71	.....	.....	84	68	92	67	84	63	86	67	87	58
16.	84	60	83	61	85	72	.....	.....	82	62	86	63	82	59	83	64	84	56
17.	83	64	87	58	86	69	.....	.....	82	60	90	62	85	59	86	65	86	55
18.	88	69	85	61	88	71	.....	.....	78	57	91	60	82	58	87	61	77	56
19.	82	61	87	49	83	69	.....	.....	80	51	83	57	81	47	80	54	81	44
20.	84	58	82	54	83	66	.....	.....	85	56	83	56	84	57	83	59	89	53
21.	87	61	86	56	91	67	.....	.....	88	60	93	56	87	59	89	59	93	59
22.	81	67	87	66	89	75	.....	.....	80	66	93	68	79	62	83	68	79	64
23.	80	61	79	60	81	69	.....	.....	82	60	83	62	81	58	81	62	81	55
24.	83	61	81	54	82	66	.....	.....	83	55	82	62	83	53	83	58	84	52
25.	77	60	90	54	82	66	.....	.....	82	57	83	55	82	54	82	52	87	54
26.	70	60	83	61	73	63	.....	.....	70	63	70	64	67	61	68	61	73	60
27.	86	67	80	61	87	68	.....	.....	77	63	90	63	78	63	84	65	77	62
28.	89	74	95	65	91	75	.....	.....	90	72	94	70	90	69	92	72	88	70
29.	91	76	93	71	93	76	.....	.....	95	70	95	74	94	75	92	77	97	73
30.	85	73	85	65	90	75	.....	.....	89	70	95	74	88	72	88	71	86	62
31.	88	67	91	65	88	74	.....	.....	89	66	87	67	87	67	85	69	93	66
Means.....	83.6	65.0	86.0	59.0	86.7	71.2	.....	.....	81.7	61.8	87.2	64.9	81.9	61.0	83.3	63.9	82.8	58.6